

CLAIMS

1. An inorganic compound that has an active oxygen developing mechanism and includes or occludes active oxygen, the inorganic compound including or occluding both a superoxide anion (O_2^-) and a peroxide anion (O_2^{2-}).

2. The inorganic compound according to Claim 1, wherein the inorganic compound is an aluminosilicate obtained by the pyrolysis of hydrogarnet.

3. The inorganic compound according to Claim 2, wherein the compositional formula of the aluminosilicate is $Ca_{12}(Al_{14-x}Si_x)O_{33+0.5x}$, where the value of X is in the range of $0 < x \leq 4$.

4. A method for manufacturing the inorganic compound according to Claim 1, wherein an aluminosilicate having an active oxygen developing mechanism is manufactured by heating hydrogarnet at no lower than 700°C and no higher than 1200°C.

5. The method according to Claim 4, wherein the compositional formula of the hydrogarnet is $\text{Ca}_3\text{Al}_2(\text{SiO}_4)_{3-Y}(\text{OH})_{4Y}$, where the value of Y is in the range of $0 \leq Y < 3$.

6. An oxidation catalyst composed of the inorganic compound according to Claim 1 or a molded article thereof.

7. A member composed of a molded article of the inorganic compound according to Claim 1.

8. The member according to Claim 7, wherein the member is an exhaust gas purification catalyst.

9. The member according to Claim 7, wherein the member is a solid electrolyte.

10. The member according to Claim 7, wherein the member is an oxygen occlusion carrier.

11. An aluminosilicate catalyst supporting cobalt oxide, which is an oxidation or combustion catalyst containing as a constituent component an aluminosilicate that includes or occludes active oxygen in its structure,

wherein the cobalt oxide is carried on the aluminosilicate surface.

12. The aluminosilicate catalyst supporting cobalt oxide according to Claim 11, wherein the aluminosilicate has a compositional formula of $\text{Ca}_{12}(\text{Al}_{14-x}\text{Si}_x)\text{O}_{33+0.5x}$, where the value of X is in the range of $0 \leq X \leq 4$.

13. A method for manufacturing the aluminosilicate catalyst supporting cobalt oxide according to Claim 11, wherein cobalt-containing hydrogarnet is decomposed by heating.

14. The method for manufacturing an aluminosilicate catalyst supporting cobalt oxide according to Claim 13, wherein the cobalt-containing hydrogarnet has a compositional formula of $(\text{Ca}_{3-y}\text{CO}_y)\text{Al}_2(\text{SiO}_4)_{3-z}(\text{OH})_{4z}$, where the value of Y is in the range of $0 < Y \leq 0.1$, and Z in the range of $0 \leq Z \leq 2.2$.

15. The method for manufacturing an aluminosilicate catalyst supporting cobalt oxide according to Claim 13,

wherein the cobalt-containing hydrogarnet is heated at no lower than 300°C and no higher than 1000°C.

16. An oxidative decomposition method, wherein a material to be treated typified by a volatile organic compound is oxidatively decomposed using the aluminosilicate catalyst supporting cobalt oxide according to Claim 11 or 12, or a molded article thereof.

17. A member composed of a molded article of the cobalt oxide aluminosilicate catalyst according to Claim 11 or 12.

18. The member according to Claim 17, wherein the member is an exhaust gas purification catalyst for a two-wheeled vehicle.

19. The member according to Claim 17, wherein the member is a combustion exhaust gas purification catalyst.

20. The member according to Claim 17, wherein the member is an oxygen occlusion member.